

U.S. Serial Number: 09/869,990
Reply to Office Action of: 06/14/2007
Family Number/Attorney Docket No.: P1997J057F/JHT-0004

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REMARKS

The claims are not amended.

Reconsideration of this application is requested in view of the arguments provided below. The claims submitted for reconsideration are claims 1 – 6, and 8 – 34.

I. Rejections under 35 U.S.C. §103

The rejection of claims 1 – 6, and 8 – 34 under 35 USC 103(a) over US 4,705,619 (McCandlish) in view of US 5,543,035 (Ziemer) and/or in view of US 3,902,988 (Bennett) is respectfully traversed. The rejection is improper, as the claimed invention requires use of a catalyst that has a specified composition prior to sulfidation. None of the cited references describe or suggest catalyst particles having the required composition.

Applicants have previously noted that McCandlish requires a precursor that includes a polydentate ligand. As Applicants have previously explained, the polydentate ligand of the McCandlish precursor is an essential element in McCandlish. According to McCandlish, if the polydentate ligand is omitted the, improved catalyst activity described in McCandlish will be lost. Thus, the only catalyst precursors described in McCandlish that include a Group VIII metal, molybdenum, and tungsten also require a polydentate ligand. By contrast, Applicants claimed invention clearly involves use of a catalyst that, prior to sulfidation, does not include a polydentate ligand.

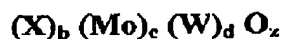
In the Response to Arguments section, the Office Action states the use of the transitional term “comprises” in the preamble of the claim means that the scope of the claimed invention is broad enough to encompass a precursor such as the McCandlish

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precursor. The Office Action asserts that the initial "comprises" transition allows the ligand of McCandlish to be present as an additional, unrecited element. Applicants respectfully disagree with this analysis, as Applicants submit that such an analysis reads limitations out of the claims.

Claims 1 and 2 of the claimed invention require contacting a hydrocarbon feedstock with a bulk metal catalyst that prior to sulfidation is represented by the formula:



wherein X is non-noble Group VIII metal, the molar ratio of b: (c+d) is 0.5/1 to 3/1, the molar ratio of c:d is >0.01/1, and $z = [2b + 6(c + d)]/2$.

Based on the specification, the plain meaning and intent of claims 1 and 2 is clear. Applicants claimed invention requires using a bulk metal catalyst. Applicants have in part defined the bulk metal catalyst by specifying that, prior to sulfidation, the catalyst is represented by a specific formula.

With regard to transitional terms, the Office Action has focused only on the first transitional term "comprises" that was used in claims 1 and 2. However, the mere fact that "comprises" was used as the initial transitional term does not preclude Applicants from presenting claim limitations that limit the inclusive scope of the "comprises" transitional term. For example, in specifying the composition of the catalyst, Applicants have defined a ratio for the amount of Group VIII non-noble metal relative to the amount of molybdenum and tungsten. The definition for this ratio includes both a lower (0.5/1) and an upper (3/1) limit. The fact that "comprises" was used as the initial transition in the preamble does not prevent the use of a lower or upper limit for the molybdenum to tungsten ratio. Instead, the ratio is recited using the

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non-inclusive transitional term "is", which restricts the inclusive effect of the transitional term "comprises" from the preamble. By using the non-inclusive transitional term "is" to define the upper and lower bounds of the ratio, amounts of molybdenum or tungsten beyond the stated ratio cannot be included in the catalyst as an additional, unrecited element.

Applicants have described two additional limitations for the catalyst used in the claimed process of claims 1 and 2. One of these limitations relates to the bulk metal catalyst prior to sulfidation. In this limitation, Applicants define a catalyst according to the invention by stating that the catalyst "is" represented by a compositional formula. Much as a lower and upper limit are provided for the relative amounts of the elements in the composition, the combination of the transitional term "is" with the compositional formula similarly limits the composition of the catalyst to the specified formula, and not a smaller or larger number of elements. With regard to the possibility of additional unrecited elements, the use of the term "comprises" as the first transition indicates that other catalysts, in addition to the specified catalyst, could also be present. However, at least some of the catalyst present must satisfy the limitations recited in the claimed invention of claim 1 or claim 2.

By contrast, in defining the composition of the sulfided bulk metal catalyst, Claims 1 and 2 recite a sulfided bulk metal catalyst "comprising" a non-noble Group VIII metal molybdate in which at least a portion but less than all of molybdenum is replaced by tungsten. Applicants intended for this limitation to be an open-ended or inclusive limitation, as evidenced by the choice of the word "comprising" when describing the sulfided bulk metal catalyst.

Based on the language of the claims, one of skill in the art would readily understand that Applicants have provided two separate types of limitations in claims 1 and 2 to specify the required catalyst. One type of limitation is an inclusive limitation regarding the composition of the sulfided bulk metal catalyst. By contrast, when

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specifying the composition of the catalyst prior to sulfidation, non-inclusive limitations related to the compositional formula and the relative amounts of each element in the formula are provided.

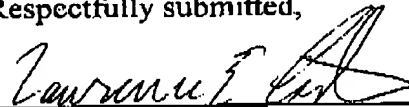
II. Conclusion

Having demonstrated that all rejections of claims have been overcome, this application is in condition for allowance. Accordingly, applicants request early and favorable reconsideration in the form of a Notice of Allowance.

If there are any questions regarding this amendment or the application in general, a telephone call to the undersigned would be appreciated, since this should expedite the prosecution of the application for all concerned.

If necessary to effect a timely response, this paper should be considered as a petition for an Extension of Time sufficient to effect a timely response. Please charge any deficiency in fees or credit any overpayments to Deposit Account No. 05-1330.

Respectfully submitted,



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☒ Pursuant to 37 CFR 1.34(a)

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